S/058/62/000/007/023/068
A061/A101

AUTHORS: Krutov, V. A., Gorshkov, V. G.

TITLE: Conversion transitions with pair production

PERIODICAL: Referativnyy zhurnal, Fizika, no. 7, 1962, 27, abstract 7B219 (In collection: "Gamma-luchi". Moscow-Leningrad, AN SSSR, 1961, 508 - 522)

TEXT: The results of all calculations, precise and approximate, performed to this day for the pair conversion coefficient without taking account of nuclear finite dimensions and shielding, are presented. Diagrams of the energy and angular distributions of the pair conversion coefficient, calculated in zeroth, first, and second Born approximations over the Coulomb field of the nucleus, are considered. E0 transitions and conversion transitions with monochromatic positron production are also analyzed.

V. Gorshkov

[Abstracter's note: Complete translation]

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KRUTOV, V. A.

"Collective Motion and Moments of Inertia of Deformed Nuclei."
"The Connection of Rotational and Internal Motion in Deformed Nuclei."
reports submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

LGU (Leningrad State Univ)

KRUTOV, V.I.

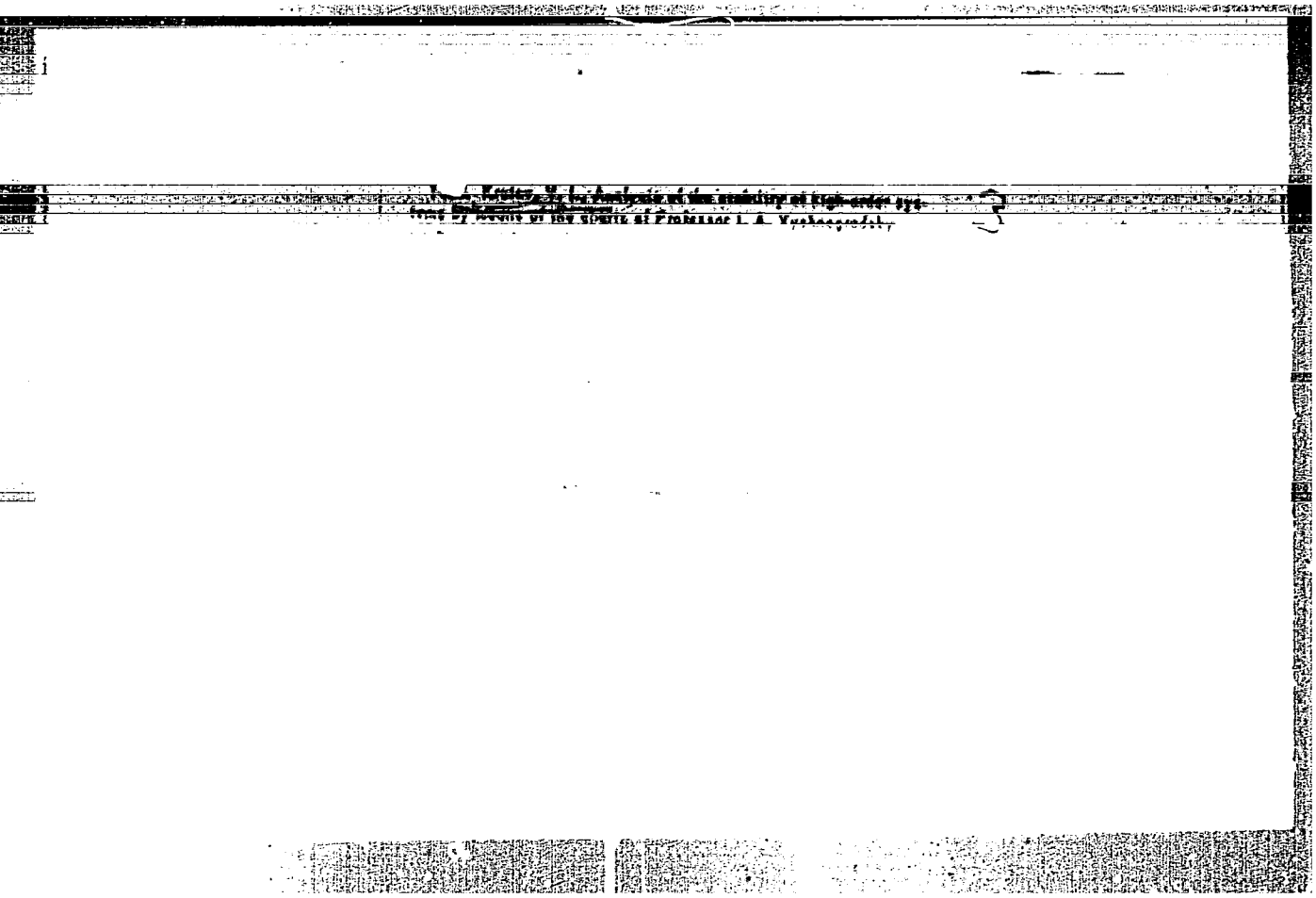
"Analysis of the Operating Stability of the Engine in Tractor KIROVETS D-35" in the book Some Problems on the Thermodynamic Research in Thermotechnics, Mashgiz, 1954

KRUTOV, V.I., kandidat tekhnicheskikh nauk.

Engine and governor stability factors. [Trudy] MVTU no.25:97-107 '54. (MLRA 7:10)
(Governors (Machinery)) (Gas and oil engines)

KRUTOV, V.I., dotsent, kandidat tekhnicheskikh nauk.

Performance stability analysis of the "Kirovets D-35" tractor engine. [Trudy] MVTU no.27:159-188 '54. (MLRA 7:11)
(Tractors--Engines)



KHUTOV, V.I., kandidat tekhnicheskikh nauk.

The Department's contributions to the theory and design of fuel feeding devices. [Trudy] MVTU o.35:104-110 '55. (MIRA 9:7)
(Gas and oil engines--Fuel systems)

KRUTOV, V.I., kandidat tekhnicheskikh nauk.

Characteristics of suction-choke fuel pumps. [Trudy] MVTU no.35: 111-122 '55. (Fuel pumps) (MIRA 9:7)

KRUTOV, V.I., kandidat tekhnicheskikh nauk.

Professor I.A.Vyshnegradskii's diagrams as an aid in the investigation of the stability of high-degree systems. [Trudy] MVTU no.35:207-214 '55. (MIRA 9:7)
(Differential equations) (Gas and oil engines--Vibration)

PHASE I BOOK EXPLOITATION 1147

Krutov, Vitaliy Ivanovich

Avtomaticheskoye regulirovaniye dvigateley vnutrennego sgoraniya (Automatic Regulation of Internal Combustion Engines) Moscow, Mashgiz, 1958. 344 p. 13,000 copies printed.

Reviewers: Ayzerman, M.A., Doctor of Technical Sciences and Popyk, K.G., Candidate of Technical Sciences; Ed.: Meleyev, A.S., Engineer; Ed. of Publishing House: Geller, I.Yu.; Tech. Ed.: Model', B.I.; Managing Ed. for Literature on General Technical and Transport Machine Building (Mashgiz): Ponomareva, K.A., Engineer.

PURPOSE: This book was approved by the Ministry of Higher Education of the USSR as a textbook on internal combustion engines for students of machine-building, polytechnical, and shipbuilding vuzes. The book may also be of use to specialists in the field of engine regulation.

COVERAGE: The author is concerned mainly with problems of the automatic regulation of internal combustion engines used in transportation. He presents block

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diagrams of systems of fuel feed regulation and investigates the operating conditions and characteristics of engines. The book contains a classification of speed governors, a description of their elements, and an analysis of the statics of the sensitive element. It explains the degree of nonuniformity and nonsensitivity of governors on the basis of equilibrium curves obtained and describes the factors influencing the magnitude of degree. Linear differential equations for the elements of the regulating system are derived and an experimental method of determining the forces of friction is presented, together with methods for analyzing the stability of automatic regulating systems. Modern frequency methods of analysis are also discussed. A brief historical survey of the development of automatic regulation is presented. No personalities are mentioned. There are 86 references, of which 78 are Soviet, 2 English, 3 French, and 3 German.

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Automatic Regulation of Internal (Cont.) 1147

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AVAILABLE: Library of Congress

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Card 6/6

KHUTOV, V.I., kand. tekhn. nauk.

Development of designs of automatic controllers used in internal combustion engines. [Trudy] MVTU no.83:197-210 '58. (MIRA 11:6)
(Governors (Machinery))

KRUTOV, V.I., dotsent, kand.tekhn.nauk

Characteristics of automatic direct-action regulators in case of parallel operation of engines. Izv.vys.ucheb.zav.; mashinostr. no.2:155-164 '59. (MIRA 13:3)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni N.Ye.Baumana.
(Diesel engines) (Governors(Machinery))

PHASE I BOOK EXPLOITATION SOV/5886

Krutov, Vitaliy Ivanovich

Analiz raboty sistem avtomaticheskogo regulirovaniya (Analysis of the Operation of Automatic Regulation Systems) Moscow, Mashgiz, 1961. 176 p. 8000 copies printed.

Reviewer: G. G. Kalish, Doctor of Technical Sciences, Professor; Ed.: D. A. Butayev, Candidate of Technical Sciences; Ed. of Publishing House: M. S. Yeliseyev; Tech. Ed.: A. Ya. Tikhanov; Managing Ed. for Literature on Instrument Construction and Means of Automation: N. V. Pokrovskiy, Engineer.

PURPOSE: The book is intended for machine-construction engineers investigating the problems of automatic regulation. It may also be used by machine-construction engineering students taking automation theory courses at schools of higher education.

COVERAGE: The book gives the derivations of linear differential equations of motion for the most widely used third-order systems and for systems with processes that can be described by third-order equations after standard simplifications. The equations are reduced to dimensionless form (normalized),

Card 1/4

Analysis of the Operation (Cont.) SOV/5886

and similarity criteria formulas for transients are obtained. Methods for estimating the qualities of transients (e.g., system stability, process characteristics) are explained, and estimation methods for quantitative process component indices and for integration constants of third-order systems are given. The estimation of quantitative parameters of components is presented in convenient graphic form, making it possible to plot the transients in full and to give an evaluation of the automatic control system. No personalities are mentioned. There are 16 references, all Soviet.

TABLE OF CONTENTS:

Card 2/4

KRUTOV, Vitaliy Ivanovich; KALISH, G.G., doktor tekhn. nauk, prof., retsenzent; BUTAYEV, D.A., kand. tekhn. nauk, red.; YELISEYEV, M.S., red. izd-va; TIKHANOV, A.Ya., tekhn. red.

[Analysis of the operation of automatic control systems] Analiz raboty sistem avtomaticheskogo regulirovaniia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 178 p. (MIRA 14:10)

(Automatic control)

ORLIN, A.S., prof.; VYRUBOV, D.N.; ALEKSEYEV, V.P.; KALISH, G.G.; KOSTYGOV, N.I.; KRUGLOV, M.G.; KRUTOV, V.I.; MIZERNYUK, G.N.; ROGANOV, S.G.; STEPANOV, Yu.A., prof., retsenzent; YEGORKINA, L.I., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Internal combustion engines]Dvigateli vnutrennego sgoraniia. Pod red.A.S.Orlina. Moskva, Mashgiz. Vol.3. [Systems, regulation, automatic control]Sistemy. Regulirovanie. Avtomatizatsiia. 1962. 307 p. (MIRA 16:1)
(Gas and oil engines) (Automatic control)

KRUTOV, Vitaliy Ivanovich; POPYK, K.G., kand. tekhn. nauk, retsenzent; YELISEYEV, M.S., inzh., red.; MODEL', B.I., tekhn. red.

[Automatic control of internal combustion engines] Avtomaticheskoe regulirovanie dvigatelei vnutrennego sgoraniia. 2., dop. i ispr. izd. Moskva, Mashgiz, 1963. 623 p. (MIRA 16:7)
(Internal combustion engines)
(Automatic control)

KRUTOV, V.I., doktor tekhn. nauk, prof.

Analysis of transient responses of the system for automatic temperature control of cooling water in diesel engines. Izv. vys. ucheb. zav.; mashinostr. no.2:195-202 '63.
(MIRA 16:8)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana.

VASILENKO, Aleksey Nikolayevich, kand. tekhn. nauk; DRYZHAKOV, Yevgeniy Vasil'yevich, dots.; ISAYEV, Sergey Ivanovich, kand. tekhn. nauk; KORNEYCHUK, Nikolay Karpovich, kand. tekhn. nauk, dots.; KOFANOV, Vyacheslav Ivanovich; assistent; KRUTOV, Vitaliy Ivanovich, doktor tekhn. nauk, prof.; MIRONOV, Boris Mikhaylovich, kand. tekhn. nauk; NIGMATULIN, Iskander Nigmatulevich, doktor tekhn. nauk, prof.; NOSOV, Mikhail Vasil'yevich, prof.; SAMOYLOV, Mikhail Sergeyevich, assistent; SPOKYSH, Igor'Pavlovich, kand. tekhn. nauk, prof.; KHVOSTOV, Viktor Ivanovich, kand. tekhn. nauk; SHISHOV, Yevgeniy Viktorovich, kand. tekhn. nauk; YUDAYEV, Boris Nikolayevich, kand. tekhn. nauk, dots.; KUTYRIN, I.N., dots., kand. tekhn. nauk, retsenzent; SHVEDOV, A.M., dots., retsenzent; TUPITSYNA, L.A., red.; FUFAYEVA, G.I., red.

[Problems in technical thermodynamics and heat transfer] Sbornik zadach po tekhnicheskoi termodinamike i teploperedache. [By] A.N.Vasilenko i dr. Moskva, Vysshaia shkola, 1964. 369 p. (MIRA 17:4)

1. Prepodavatel'skiy kollektiv kafedry termodinamiki i teploperedachi Moskovskogo vysshego tekhnicheskogo uchilishcha (for all except Kutyrin, Shvedov, Tupitsyna, Fufayeva). 2. Moskovskiy aviatsionnyy institut (for Kutyrin, Shvedov).

BRAYT, P.I.; KRUTOV, V.I.

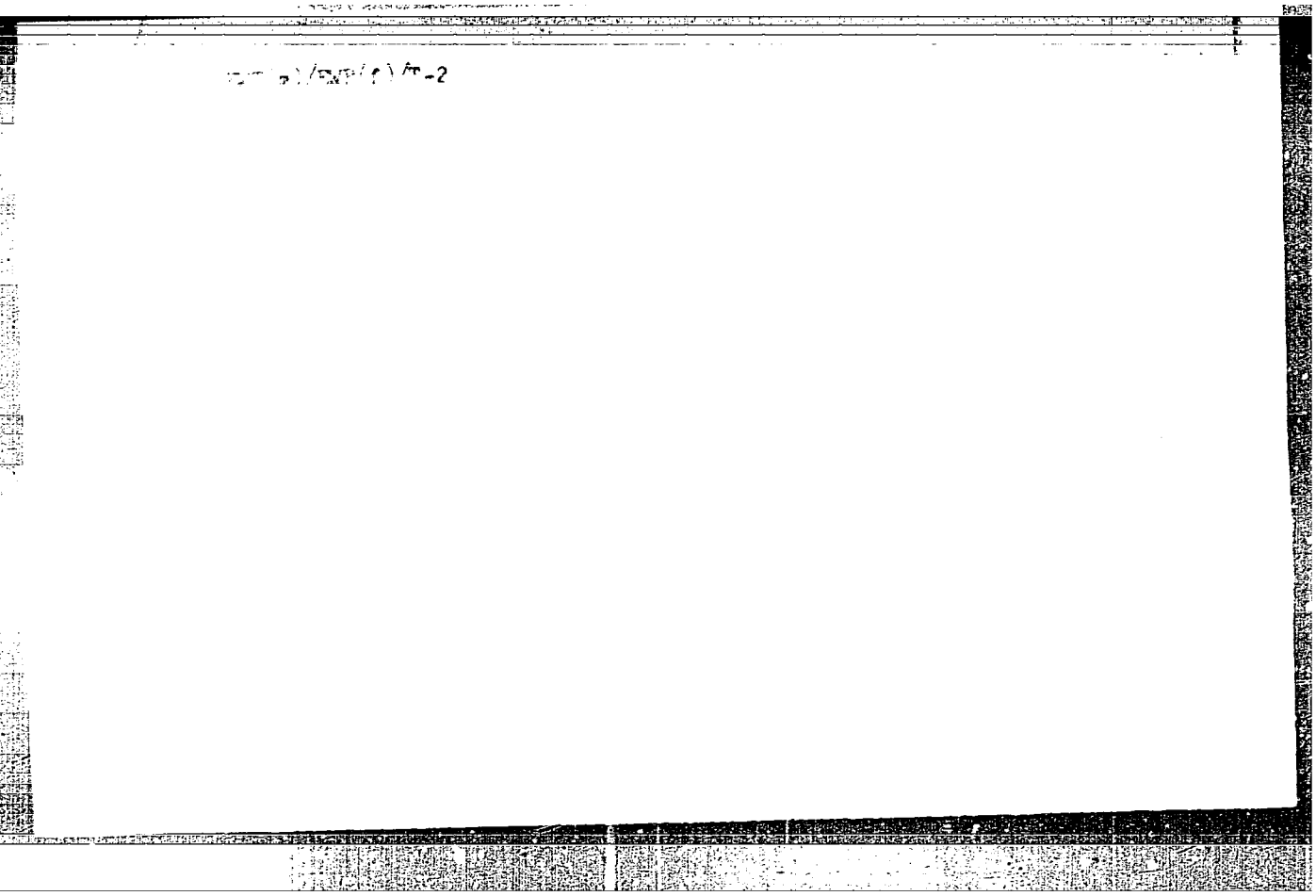
Settling and deformation of buildings on filled-in soil.
Sbor. trud. NIIosn. no.55:116-132 '64. (MIRA 18:3)

FROLOV, V.I.

[Transient processes in automatic control systems] Perekhodnye protsessy sistem avtomaticheskogo [illegible] regulirovaniia. Moskva, Mashinostroenie, 1965. [illegible] p. (MIRA 18:[illegible])

KRINETSKIY, I.I., doktor tekhn. nauk; KHUTOV, V.I., doktor tekhn. nauk, prof., retsenzent

[Control of internal combustion engines] Regulirovanie dvigatelei vnutrennego sgoraniia. Izd.2., perer. i dop. Moskva, Mashinostroenie, 1965. 263 p. (MIRA 18:4)



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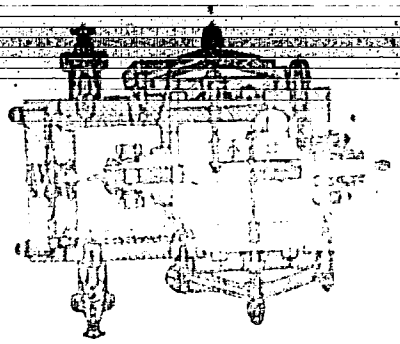

ABELEV, Yu.M.; DONDYSH, A.M.; IVANOV, Yu.K.; KRUTOV, V.I.; LISOVSKIY, V.P.; PANKIN, G.N.

Experience in correcting the tilt of a large-panel 1-480-P series apartment house after the sagging of the foundation. Osn., fund. i mekh. grun. 7 no.3:23-25 '65.
(MIRA 18:6)

ACC NR: AP6019895 (A) SOURCE CODE: UR/0145/65/000/012/0051/0056

AUTHOR: Krutov, V. I. (Doctor of technical sciences, Professor); Shatrov, V. I. (Graduate student)

ORG: MVTU imeni N. E. Bauman

TITLE: Experimental data on the transient processes of a diesel with turbine supercharging

SOURCE: IVUZ. Mashinostroyeniye, no. 12, 1965, 51-56

TOPIC TAGS: diesel engine, supercharged engine, gas turbine, engine crankshaft, strain gage, torque, hydraulic device / 1D6N diesel engine

ABSTRACT: The authors give the results of an experimental study of diesel engine operating conditions where the diesel engine is equipped with a gas turbine supercharger. The problems caused by introduction of the supercharger are discussed. One of these is the difference between the crankshaft speed of the engine and the speed of the turbine. Such a condition causes insufficient access of air for combustion. This is not true for mechanically connected engine and supercharger units. Transient processes of the engine and supercharger are experimentally studied in the 1D6N diesel engine with a TN-6 constant-pressure turbine compressor. The LE-4-53 loading unit used in the experiment was built by MAI. Standard measuring equipment is used which

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ACC NR: AP6019895

fulfills the requirements of GOST 10448-63. Induction pickups placed inside the flywheel and compressor housings are used to register the rpm of the engine and the turbocompressor. The pickup signals are fed to an amplifier. Fuel measurement is recorded in a like manner. Strain gages are used for recording engine torque. These are placed on the cylindrical part of the input shaft of the hydraulic brake and connected according to a bridge circuit. A low-pressure pickup at the compressor output is used for measuring supercharging pressure. Engine control is set at maximum by setting the spring at its limit. Graphs are given for torque, rpm of the crankshaft and compressor turbine rotor, including supercharging pressure as a function of transient process time. The effect of individual factors on diesel operation are analyzed. The results show that increasing the load on gas turbine supercharging increases the duration of transient processes in the engine. Orig. art. has: 3 figures, 1 table, 1 formula.

SUB CODE: 13, 21/ SUBM DATE: 12Jul65/ ORIG REF: 003

Card 2/2 mlp

L 00897-67 EWT(d)/EWT(m)/EWP(f)/T-2

ACC NR: AP6009258 (N) SOURCE CODE: UR/0122/65/000/011/0023/0026

AUTHOR: Krutov, V. I. (Doctor of technical sciences, Professor); Shatrov, V. I. (Engineer) 33 B

ORG: None

TITLE: Dynamics of a diesel with turbosupercharger

SOURCE: Vestnik mashinostroyeniya, no. 11, 1965, 23-26

TOPIC TAGS: turbosupercharged engine, diesel engine, compressor rotor

ABSTRACT: The authors analyze the effect of a self-contained turbosupercharger on the dynamic characteristics of diesel engines. A formula is derived for transient processes in a diesel with a self-contained turbocompressor and curves are given comparing these processes in the 1D6M diesel engine with and without supercharging. The results show that the inertia of the compressor rotor extends the duration of the transition process. Comparison of transition processes assuming various moments of inertia in the compressor rotor shows an increase in the time of the transition process by a factor of 2.5 when the moment of inertia is increased by a factor of 3. This indicates that if other factors remain constant, the transition process is considerably shortened by reducing the moment of inertia in the turbocompressor. Orig. art. has: 2 figures, 35 formulas.

SUB CODE: ME, 21/ SUBM DATE: none/ ORIG REF: 003

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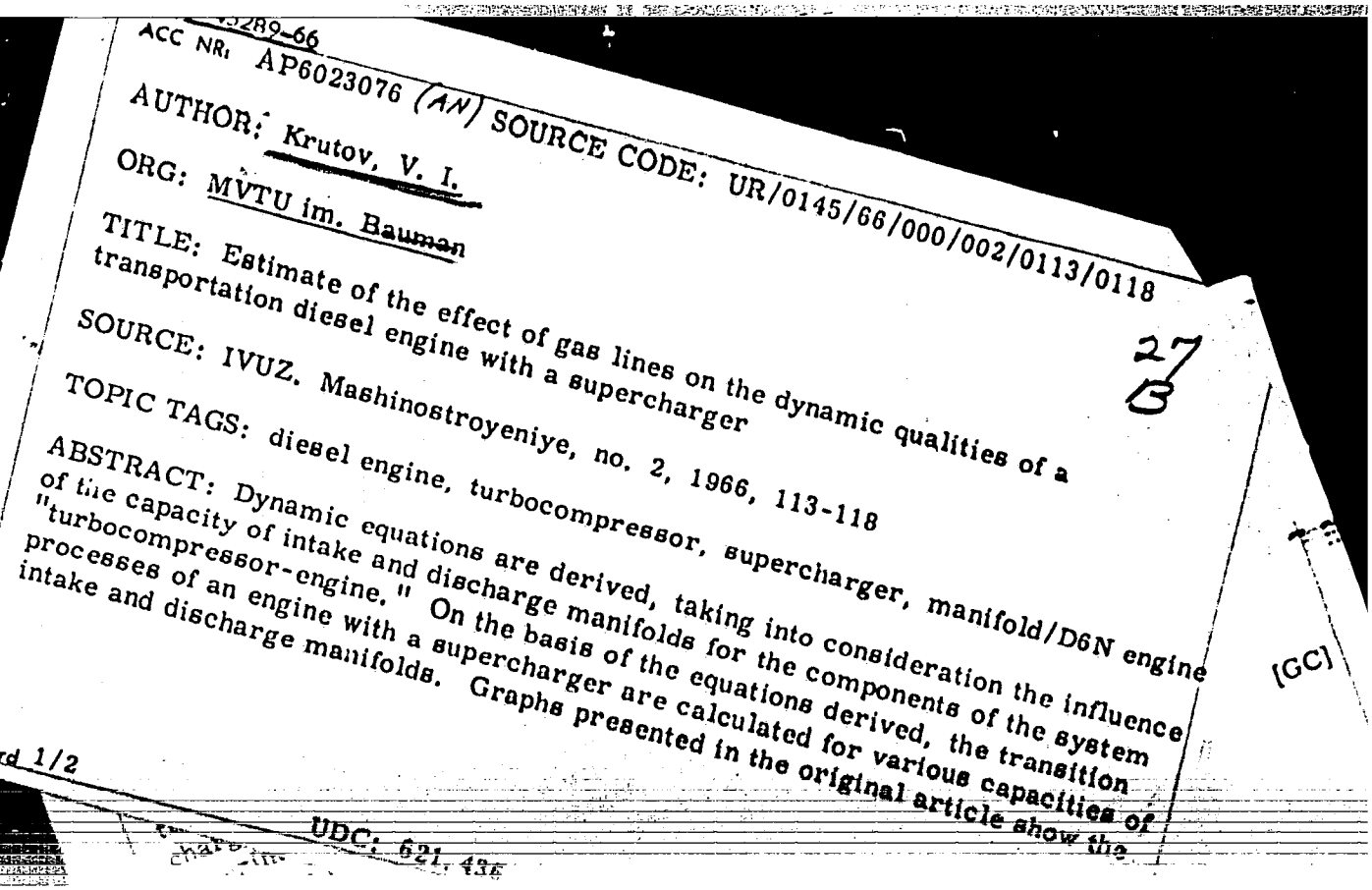
Card 1/1 UDC: 621.436.621.515.5:531.3



3289-66

ACC NR: AP6023076 (AN) SOURCE CODE: UR/0145/66/000/002/0113/0118

AUTHOR: Krutov, V. I.

ORG: MVTU im. Bauman

TITLE: Estimate of the effect of gas lines on the dynamic qualities of a transportation diesel engine with a supercharger

27
B

SOURCE: IVUZ. Mashinostroyeniye, no. 2, 1966, 113-118

TOPIC TAGS: diesel engine, turbocompressor, supercharger, manifold/D6N engine

[GC]

ABSTRACT: Dynamic equations are derived, taking into consideration the influence of the capacity of intake and discharge manifolds for the components of the system "turbocompressor-engine." On the basis of the equations derived, the transition processes of an engine with a supercharger are calculated for various capacities of intake and discharge manifolds. Graphs presented in the original article show the

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UDC: 621.436

Card 2/2

KRUTOV, V.I., doktor tekhn. nauk, prof.; ROMANENKO, N.T., kand. tekhn. nauk, dotsent; IGNATENKO, V.V., kand. tekhn. nauk, dotsent

Effect of masses connected with the servomotor piston on transient processes. Izv. vys. ucheb. zav.; mashinostr. no.5:87-93 '65. (MIRA 18:11)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche im. Baumana.

KRUTOV, V.I., doktor tekhn.nauk, prof.; SHATROV, V.I., inzh.

Dynamics of a diesel engine with a turbo-driven supercharger.
Vest.mashinostr. 45 no.11:23-26 N '65.
(MIRA 18:12)

KRUTOV, V.I., inzhener; SHVETS, V.B., inzhener.

Preparing foundations for building on filled-in ground. Biul.stroi. tekh. 13 no.5:8-11 My '56. (MLRA 9:8)

1. Nauchno-issledovatel'skiy institut osnovaniy i fundamentov Ministerstva stroitel'stva SSSR.
(Soil mechanics) (Foundations)

KRUTOV, V.I., inzh.

Deformations in buildings and installations erected on filled ground. Biul. stroi. tekh. 14 no.9:12-16 S '57. (MIRA 10:12)

1. Nauchno-issledovatel'skiy institut osnovaniy i podzemnykh sooruzheniy Akademii stroitel'stva i arkhitektury SSSR.
(Foundations)

ABELEV, Yu.M., professor; KRUTOV, V.I., inzhener. PETROV, A.I., inzhener.

Building on fill. Stroi. prom. 35 no.5:16-20 My '57. (MLRA 10:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut osnovaniy i podzemnykh sooruzheniy Akademii stroitel'stva i arkhitektury SSSR (for Krutov). 2. Proyektno-konstruktorskoye byuro zavoda imeni Il'icha (for Petrov).
(Foundations) (Soil mechanics)

KRUTOV, V.I., Cand Tech Sci -- (diss) "Problems of the use of earth fill ~~filled soils in the capacity of building~~ as construction foundations bases." Mos, 1958, 19 pp with ~~sketches~~ drawings (Acad of Construction and Architecture USSR. Sci Res Inst of ~~Bases~~ Foundations and Underground Constructions NIIOSP) 150 copies

(KL, 27-58, 110)

KRUTOV, V., inzh.

Building a five-story apartment house on fill. Na stroi.Mosk. 1 no.10:15-17 O '58. (MIRA 11:12)
(Foundations) (Soil mechanics)

AKELOV, Yu.M., prof.; KRUTOV, V.I., inzh.

Scheme for classifying fills considering them as bases of structures. Prom. stroi. 36 no.11:28-32 N '58. (MIRA 12:1)

1.Institut osnovaniy i podzemnykh sooruzheniy Akademii stroitel'stva i arkhitektury SSSR.
(Soils--Classification) (Foundations)

ABELEV, Yu.M., prof.; KRUTOV, V.I., kand.tekhn.nauk, mladshiy nauchnyy sotrudnik; NOVITCHENKO, K.M., inzh., red.

[Practices in constructing buildings on fills] Opyt stroitel'stva zdanii na nasypnykh gruntakh. Moskva, 1959. 36 p.
(MIRA 13:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. Byuro tekhnicheskoy informatsii. 2. Rukovoditel' laboratorii stroitel'stva na lessovykh prosadochnykh gruntakh Nauchno-issledovatel'skogo instituta osnovaniy Akademii stroitel'stva i arkhitektury SSSR (for Abelev). 3. Nauchno-issledovatel'skiy institut osnovaniy Akademii stroitel'stva i arkhitektury SSSR (for Krutov).
(Foundations)

KRUTOV, V.I.; SOROCHAN, Ye.A.

Designing and constructing large-panel buildings on sagging loess soils. Osn., fund. i mekh.grun. no.6:3-5 '59.
(MIRA 13:4)

(Loess) (Foundations)

KRUTOV, V.I.

Straightening leaning flues after their settlement. [Trudy] NIIOSP no.37:68-74 '59. (MIRA 12:11)
(Soil mechanics) (Foundations) (Flues)

SOKOLOV, N.M.; KRUTOV, V.I.

Information. Osn.fund.i mekh.grun. 2 no.2:31 '60. (MIRA 13:8)
(Foundations)

KRUTOV, V.I.

Effect of organic materials in fill foundations on the settlement of structures. Osn., fund.i mekh.grun. 2 no.3:25 '60. (MIRA 13:7)

(Foundations) (Soil mechanics)

KRUTOV, V.I.; TEPLITSKIY, M.L.

Erection of an apartment house on filled ground. Osn., fund. i mekh. grun. 3 no.5:5-7 '61. (MIRA 14:11)
(Kursk--Foundations)

ABELEV, Yu.M.; BRAYT, P.I.; KRUTOV, V.I.; SOKOCHAN, Ye.A.

Deformations of a large-panel apartment house on sagging soil with artificial wetting of the footing. Osn., fund.i mekh.grun. 3 no.6:12-15 '61. (MIRA 15:4)
(Apartment houses) (Foundations)

ABELEV, Yuriy Mordukhovich, prof.; KRUTOV, Vladimir Ivanovich, kand.tekhn. nauk; SHERSHUKOVA, M.A., red.izd-va; KASIMOV, D.Ya., tekhn.red.

[Erection of buildings and structures on filled ground] Vozvedenie zdanii i sooruzhenii na nasypnykh gruntakh. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1962. 147 p. (MIRA 15:5)

(Foundations)

ABELEV, Yu.M.; BRAYT, P.I.; KRUTOV, V.I.; KULACHENOK, B.G.; SOROCHAN, Ye.A.; EYDUK, R.P.

Testing a series 1-480-P large-panel apartment house erected on settling soil. Osn., fund.i mekh.grun. 4 no.2:3-5 '62. (MIRA 15:8)

(Zaporozh'ye--Apartment houses--Testing)

KRUTOV, V.I.

Study of the deformation of settling soil under foundations.
Osn., fund. i mekh. grun. 4 no.3:12-14 '62. (MIRA 15:7)
(Soil mechanics) (Foundations)

KRIGER, N.I.; KRUTOV, V.I.; SOROCHAN, Ye.A.; TARASOVA, I.V.

Conference on problems of building on settling soil.
Osn., fund. i mekh. grun. 4 no.3:29-31 '62. (MIRA 15:7)
(Soil mechanics--Congresses)

KRUTOV, V.I.

Deformations of an industrial building built on unevenly compressed soil. Prom. stroi. 40 no.5:18-20 '62. (MIRA 15:5)
(Industrial plants) (Foundations)

KRUTOV, V.I.

Calculating the settlement of foundations according to data obtained by testing soil with stamps and wetting. Osn., fund. i mekh. grun. 4 no.6:15-17 '62. (MIRA 16:1)
(Soil mechanics) (Foundations)

ASYANIN, Petr Dmitriyevich, inzh.; KRUTOV, Vladimir Ivanovich, st. nauchn. sotr.; KASITSYNA, K.N., inzh., red.

[Compacting sagged grounds by rolling in making soil cushions] Uplotnenie prosadochnykh gruntov sposobom ukatki pri ustroistve gruntovykh podushek; opyt tresta "Nikopol'stroi." Moskva, Gosstroiizdat, 1963. 24 p. (MIRA 17:1)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Glavnyy inzhener tresta "Nikopol'stroy" (for Asyanin). 3. Nauchno-issledovatel'skiy institut osnovaniy i podzemnykh sooruzheniy Akademii stroitel'stva i arkhitektury SSSR (for Krutov).

KRUTOV, V.I.; TARASOVA, I.V.

Method of measuring "initial pressure" in settling soils. Osn. fund.i mekh.grun. 6 no.1:7-9 '64. (MIRA 17:2)

ABELEV, Yu.M., doktor tekhn. nauk, prof.; ABELEV, M.Yu., inzh.; BAKHOLDIN, B.V., kand. tekhn. nauk; BEREZANTSEV, V.G., doktor tekhn. nauk, prof.; VYALOV, S.S., doktor tekhn. nauk; GODES, E.G., inzh.; GORBUNOV-POSADOV, M.I., doktor tekhn. nauk, prof.; DALMATOV, B.I., doktor tekhn. nauk, prof.; DOKUCHAYEV, V.V., kand. tekhn. nauk; KRUTOV, V.I., kand. tekhn. nauk; KSENOFONTOV, A.I., kand. tekhn. nauk; MARIUPOL'SKIY, G.M., kand. tekhn. nauk; MORAVESKUL,N.N., inzh.; PERLEY, Ye.M., inzh.; SAVINOV, O.A., doktor tekhn. nauk; SIDOROV, N.N., kand. tekhn. nauk; SMORODINSKIY, N.A., kand. tekhn. nauk; SOKOLOV, N.M., doktor tekhn.nauk; FEDKIN, A.Ya., inzh.; SHASHKOV, S.A., kand. tekhn.nauk; SHEYKOV, M.L., inzh.; YAROSHENKO, V.A., kand.tekhn.nauk, [deceased]; KHALIZEV, Ye.P., kand. tekhn. nauk, nauchn.red.

[Manual for the designing of industrial plants, apartment houses, and public buildings and structures; foundations] Spravochnik proektirovshchika promyshlennykh, zhilykh i obshchestvennykh zdanii i sooruzhenii; osnovaniia i fundamenty. Leningrad, Stroiizdat, 1964. 268 p.
(MIRA 18:1)

SOKOLOV, Nikolay Mikhaylovich, doktor tekhn. nauk; KRUTOV, Vladimir Ivanovich, kand. tekhn. nauk; SOKOLOVAN, Yevgeniy Andreyevich, kand. tekhn. nauk;

[Construction of large-panel buildings on sagging ground] Stroitel'stvo krupnopanel'nykh zdanii na prosadochnykh gruntakh. Moskva, Stroiizdat, 1965. 191 p. (MIRA 18:2)

ABELEV, Yuriy Mordukhovich, doktor tekhn. nauk; KRUTOV, Vladimir Ivanovich, kand. tekhn. nauk; EYDUK, Rudol'f Petrovich, st. nauchn. sotr., inzh.; POLUYANEVA, V.I., inzh., nauchn. red.

[Preparation of foundation beds and the laying of foundations of large-panel apartment houses on sagging soil; practices of the Research Institute for Foundation Beds and Underground Structures of the State Committee on Construction of the Council of Ministers of the U.S.S.R. and of the Zaporozh ye Housing Construction Trust, and the Nikopol' Construction Foundations Trust] Podgotovka osnovanii i ustroistvo fundamentov krupnopanel'nykh zhilykh domov na prosadochnykh gruntakh; iz opyta NII osnovanii i podzemnykh sooruzhenii Gosstroia SSSR, trestov "Zaporozhzhilstroi" i "Nikopol'stroi." Moskva, Stroizdat, 1965. 19 p. (MIRA 18:9)

1. Rukovoditel' laboratorii stroitel'stva na prosadochnykh gruntakh Nauchno-issledovatel'skogo instituta osnovaniy i podzemnykh sooruzheniy (for Abelev). 2. Laboratoriya stroitel'stva na posadochnykh gruntakh Nauchno-issledovatel'skogo instituta osnovaniy i podzemnykh sooruzheniy, Moskva (for Krutov, Eyduk).

AP5000174

Zhitnik, I. A.; Krutov, V. V.; Malyavkin, L. P.; Mendel'shtam,

The solar image in the far ultraviolet spectral range

Kosmicheskiye issledovaniya, v. [illegible], 6, [illegible], 920-927

geophysical rocket, solar spectrum, ultraviolet spectral range, rocket container, telemetric [illegible] spectrum, [illegible] field

Solar images were obtained by a specially arranged apparatus [illegible] rocket equipped for photographing the sun in the [illegible] range. The [illegible] container which was maintained in a stable position during the whole flight of the rocket. The transparency of the container was opened at a height of 120 km during the ascent and closed at 200 km during the descent. The rocket flight reached a maximum height of 500 km. The position of the container relative to the direction of the sun was

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L 20992-65

ACCESSION NR: AP5000174

determined from the telemetric records of the transmitter. The spectral range from 10 to 90 Å was not recorded. Good records were obtained in the 170—400-Å range. The HeII lines at 228, 256, 304 Å, [illegible] spectrum, and the following lines of other elements: [illegible] at 284 Å, FeXVI at 335 Å, and [illegible] at 400 Å were clear. [illegible] intense ultraviolet radiation [illegible] above floccult[illegible]. Orig. art. has: 6 figures and [illegible] tables.

ASSOCIATION: none

SUBMITTED: 27Feb64 ENCL: 00 SUB CODE: AA

NO REF SOV: 001 OTHER: 010 ATD PRESS: 3145

Card 2/2

L 2435-66 EWT(1)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5023635 UR/0000/65/000/000/0533/0533

AUTHORS: Zhitnik, I. A.; Krutov, V. V.; Malyavkin, L. P.; Mandel'shtam, S. L.

TITLE: Image of the sun in the far short wave region of the spectrum (Thesis)

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965, Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 533

TOPIC TAGS: solar X radiation, solar facula

ABSTRACT: The image of the sun in the short wave region of the spectrum 170-400 Å was obtained by using apparatus placed on a geophysical rocket launched June 6, 1963, which reached an altitude of 500 km. It was observed that regions of enhanced intensity of the short wave radiation are located above facula fields and remain on the sun for at least a solar day.

ASSOCIATION: none

SUBMITTED: 02Sep65 ENCL: 00 SUB CODE: AA

NO REF SOV: 000 OTHER: 000

Card 1/1

KRUTOVA, A. N.

Krutova, A. N. "The problem of classification of clinical forms of tularemia," Trudy Khovrin. obl. klinich. bol'nitsy, Khovrino (Moscow Oblast), 1948, p. 153-57

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

2080. KRUTOVA A.S. Inst. of Epidemiol., Microbiol. and Hyg., Moscow. *Comparative study of methods of determining virulence of diphtheria cultures in vivo and in vitro (Russian text) Z. MIKROBIOL. 1956, No. 4 (31-34) Illus. 3 Tables 1

The author studied the method of testing the virulence of diphtheria cultures in vitro, proposed by Elek in 1948. The number of strains examined was 292; of these 87 proved virulent and 205 avirulent. (This agreed completely with the results of virulence tests on guinea-pigs by the intracutaneous method.) The author concludes that the in-vitro determination of virulence of diphtheria cultures is completely accurate and objective. This method is simpler and cheaper than the virulence test on guinea-pigs. Results are available in 48 hr. Kaulen - Moscow

KRUTOVA, E.

HRDLICKA, J.; KRUTOVA; MALEK, J.

[Frequency and seasonal rhythm of premature births in relation to the weight and size of fetus] Frekvence predcasnych porodu podle vah a mer plodu a jejich sezonni rytmus. Cesk.gyn. 15 no.1-2:26-35 '50. (CLML 19:1)

1. Of the First Obstetrical and Gynecological Clinic of Charles University, Prague (Head -- Prof. K.Klaus, M.D.)

KRUTOVA, Eva

LUNDOVA, Anna, MUDr; SOYKOVA-PACHNEROVA, Eva, MUDr; KRUTOVA, Eva, MUDr; MACHOLDA, Fr., MUDr

Secondary findings in etiology of genital tuberculosis. Prakt. lek., Praha, 35 no.3:54-56 5 Feb 55.

1. I gin. klin. KU, prednosta prof. MUDr K.Klaus (for Lundova, Soykova-Pachnerova, Krutova) 2. Plic. kl. KU v Praze; predn. prof. MUDr J.Jedlicka (for Macholda)

(TUBERCULOSIS, FEMALE GENITAL, etiology and pathogenesis current findings)

TOPCHIYEV, A.V., akademik, glavnyy redaktor; PETROV, B.N., otvetstvennyy redaktor; AYZERMAN, M.A., redaktor; BERNSHTEYN, S.I., redaktor; VASIL'YEV, R.V., redaktor; IVANOV, V.I., redaktor; KARAGODIN, V.M., redaktor; KOGAN, B.Ya., redaktor; LETOV, A.M., redaktor; PORTNOV-SOKOLOV, Yu.P., redaktor; SOLODOVNIKOV, V.V., redaktor; ULANOV, G.M., redaktor; TSUPKIN, Ya.Z., redaktor; KRUTOVA, I.N., redaktor; ASTAF'YEVA, O.A., tekhnicheskiy redaktor

[A session of the Academy of Sciences of the U.S.S.R. on scientific problems in automatization of production, October 15-20, 1956; principal problems of automatic control] Sessiia Akademii nauk SSSR po nauchnym problemam avtomatizatsii proizvodstva, 15-20 oktiabria 1956 g.; osnovnye problemy avtomaticheskogo regulirovaniia i upravleniia. Moskva, 1957. 334 p. (MLRA 10:5)

1. Adakemiya nauk SSSR. 2. Chlen-korrespondent AN SSSR. (for Petrov) (Automatic control)

KRUTOVA, I.N.; SUBBOTINA, O.V.; UTKIN, I.V.; KOBRINSKIY, A.Ye.; GAVRILOV, M.A.; RAZUMIKHIN, S.V.

Conference of the Academy of Sciences of the U.S.S.R. on Automation. Avtom. i telem. 18 no.2:182-192 F '57. (MLRA 10:3)
(Automatic control)

KRUTOVA, I.N.

PHASE I BOOK EXPLOITATION SOV/3754

Gorskaya, Nina Sergeyevna, Inessa Nikolayevna Krutova, and Vladislav Yul'yevich Rutkovskiy

Dinamika nelineynykh servomekhanizmov (Dynamics of Nonlinear Servomechanisms) Moscow, AN SSSR, 1959. 318 p. Errata slip inserted. 3,300 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.

Ed.: B.N. Petrov, Corresponding Member, Academy of Sciences USSR
Ed. of Publishing House: Ye. N. Grigor'yev; Tech. Ed.: P.S. Kashina.

PURPOSE: This monograph is intended for scientific workers and engineers studying or designing automatic control systems and their components. Ch. II is of special interest to persons studying the phase plane method and the method of point transformations.

COVERAGE: The monograph examines certain specific types of electropneumatic, hydraulic, and electric servomechanisms in order to investigate the dynamics of nonlinear servomechanisms on the basis of the method of phase space and of the

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theory of point transformations. Section 1 of Ch. I, Ch. IV, and sections 4-6 of Ch. VII were written by I.S. Gorskaya; Ch. III and VI, and sections 2-5 of Ch. I by I.N. Krutova; and Ch. II and V, and sections 1-3 of Ch. VII by V.Yu. Rutovskiy. The authors thank N. A. Furayev and V.V. Petrov. There are 130 references: 100 Soviet, 24 English, 3 German, and 3 French.

TABLE OF CONTENTS:

KRUTOVA, I.N. (Moskva)

Dynamic properties of vibration servomechanisms used in electric automatic pilots. Avtom.i telem. 20 no.2:115-126 F '59.
(MIRA 12:3)
(Servomechanisms) (Automatic pilot (Airplanes))

KRUTOVA, I.N. (Moskva)

Dynamics of the vibration circuit of an electric servomechanism under free oscillation conditions [with summary in English]. Avtom. i telem. 20 no.4:422-436 Ap '59. (MIRA 12:5)
(Automatic control)

KULEBAKIN, V.S., akademik, otv. red.; PETROV, B.N., akademik, otv. red.; BODNER, V.A., doktor tekhn. nauk, red.; VORONOV, A.A., doktor tekhn. nauk, red.; IVAKHNENKO, A.G., red.; ISHLINSKIY, A.Yu., akademik, red.; KOSTYUK, O.M., kand. tekhn. nauk, red.; KRASSOV, I.M., kand. tekhn. nauk, red.; KUNTSEVICH, V.M., kand. tekhn. nauk, red.; KUKHTENKO, A.I., red.; RYABOV, B.A., doktor tekhn. nauk, red.; SIMONOV, N.I., doktor fiz.-mat. nauk, red.; ULANOV, G.M., doktor tekhn. nauk, red.; FEDOROV, S.M., kand. tekhn. nauk, red.; TSYPKIN, Ya.Z., doktor tekhn. nauk, red.; CHINAYIV, P.I., kand. tekhn. nauk, red.; KRUTOVA, I.N., kand. tekhn. nauk, red.; RUTKOVSKIY, V.Yu., kand. tekhn. nauk, red.

[Invariancy theory in automatic control systems; transactions] Teoriia invariantnosti v sistemakh avtomaticheskogo upravleniia; trudy. Moskva, Nauka, 1964. 503 p. (MIRA 18:2)

1. Vsesoyuznoye soveshchaniye po teorii invariantnosti i yeye primeneniyu v avtomaticheskikh ustroystvakh. 2d, Kiev, 1962. 2. Chlen-korrespondent AN Ukr.SSR (for Ivakhnenko, Kukhtenko).

ACCESSION NR: AP4015300 S/0280/64/000/001/0124/0131

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Model-adaptive system — Part I

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 1, 1964, 124-131

TOPIC TAGS: automatic control, adaptive automatic control, model adaptive automatic control, model reference adaptive control, model adaptive control theory

ABSTRACT: The well-known principle of operation and some characteristics of a model-reference adaptive control system are theoretically investigated. [The system given in Fig 5, p. 125, of the Russian original is "not considered adaptive" according to John E. Gibson, "Nonlinear Automatic Control," 1962, p. 498. Abstracter]. An ideal model is considered. The use of an aperiodic unit as a reference model is indicated for complicated and higher-order control systems.

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ACCESSION NR: AP4015300

Also, the possibilities of a resettable model are mentioned. "The project was fulfilled in IAT, under B. N. Petrov, in 1960-63." Orig. art. has: 7 figures and 25 formulas.

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR)

SUBMITTED: 08Aug63 DATE ACQ: 12Mar64 ENCL: 00

SUB CODE: CG, IE NO REF SOV: 005 OTHER: 003

Card 2/2

ACCESSION NR: AP4028986 S/0280/64/000/002/0143/0152

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Model-adaptive control system. Part.2.

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1964, 143-152

TOPIC TAGS: automatic control, adaptive automatic control, model adaptive automatic control

ABSTRACT: Some general characteristics of a model-adaptive system, such as algorithms and laws of coefficient adjustment, are theoretically considered. For a readjustment of coefficients k_0 and k_1 (see authors' article in Izv. AN SSSR. OTN. Tekhnicheskaya kibernetika, 1963, no. 1), these algorithms are plotted and discussed:

$$\varepsilon = |x_m| - |x|,$$
$$\varepsilon = (x_m - x)\operatorname{sign} x,$$
$$\varepsilon = (x_m - x)\operatorname{sign} x_m,$$
$$\varepsilon = (x_m - x)\operatorname{sign} \dot{x}.$$

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ACCESSION NR: AP4028986

Similarly, for coefficients k_2, these algorithms are plotted:

$$\varepsilon_1 = |\varepsilon_{21}| - |\varepsilon|,$$
$$\varepsilon_2 = (\varepsilon_{21}| - \varepsilon) \operatorname{sign} \varepsilon,$$
$$\varepsilon_3 = (\varepsilon_{21} - \varepsilon) \operatorname{sign} \varepsilon_{21}.$$

A formula for a general law of forming the self-adjusting coefficients is given. Model-adaptive systems are recommended for these cases: (1) when the plant parameters vary widely and rapidly, in an unknown way; (2) when the nonlinear plant characteristics may result in a loss of stability without self-adapting loops; (3) when the constant-parameter plant would require complicated correcting devices. Orig. art. has: 9 figures and 27 formulas.

ASSOCIATION: none

SUBMITTED: 08Aug63 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: IE NO REF SOV: 003 OTHER: 001

Card 2/2

ACCESSION NR: AP4024680 S/0103/64/025/002/0188/0194

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Dynamics of a first-order model-adaptive system

SOURCE: Avtomatika i telemekhanika, v. 25, no. 2, 1964, 188-194

TOPIC TAGS: automatic control, adaptive automatic control, model adaptive automatic control, model adaptive control dynamics, model adaptive control stability

ABSTRACT: The effect of error algorithms, the number of resettable coefficients, and their resetting law upon the dynamic processes inside a model-adaptive automatic-control system is theoretically considered. The principal loop of the system is described by a first-order linear equation, and the coefficient-resetting law contains only a term expressing the error between the input signal g(t) and the controlled variable x(t). The model is represented by

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ACCESSION NR: AP4024680

an ideal unit $x_m = g(t)$. It is proved that, under the above conditions, the system is stable with negative self-regulation coefficients b, yet under steady-state conditions, the variation of b introduces an error. Orig. art. has: 9 figures and 24 formulas.

ASSOCIATION: none

SUBMITTED: 12Sep63 DATE ACQ: 15Apr64 ENCL: 00

SUB CODE: CG, IE NO REF SOV: 002 OTHER: 002

Card 2/2

ACCESSION NR: AP4035072 S/0103/64/025/004/0473/0483

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Effect of the integrals in algorithms of self-adjusting coefficients upon the dynamics of a model-adaptive system

SOURCE: Avtomatika i telemekhanika, v. 25, no. 4, 1964, 473-483

TOPIC TAGS: automatic control, adaptive automatic control, model adaptive automatic control, automatic control theory

ABSTRACT: In the general case, the model-adaptive automatic-control system can be described by:

$$\text{plant: } T\dot{\varphi} + B\varphi = \delta$$
$$\text{controller: } \delta = K_g g - K_1 \varphi$$
$$K_g = 1 + K_{gu}\int (g - a\varphi)\operatorname{sign} g\,dt + K_{gs}(g - a\varphi)\operatorname{sign} g,$$
$$K_1 = a - K^*_{1u}\int (g - a\varphi)\operatorname{sign}\varphi\,dt - K^*_{1s}(g - a\varphi)\operatorname{sign}\varphi.$$

where $T, B, K_{gu}, K_{gs}, K^*_{1u}, K^*_{1s}, a$ are constants, "a" being a specified static

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ACCESSION NR: AP4035072

relation between g and φ. The effect of the integrals in the formulas of self-adjusting coefficients in the feedback loop K_i and controlling signal K_j upon the operation of the system is considered. It is shown that to maintain a specified relation between the input signal and the output coordinate under steady-state conditions with zero error, the algorithm of K_i should contain the integral. That makes the system stable at any value of the self-regulation coefficient. Transient processes can be improved by introducing the terms $K^*_{i\varphi}(g - a\varphi)\operatorname{sign}\varphi$ and $K_{jg}\cdot(g - a\varphi)\operatorname{sign} g$ into the algorithms of K_i and K_j, respectively. No introduction of the integral into K_j is recommended. In the case of a system operating with $g(t) = 0$, the integrals should not be introduced into the algorithms of K_i and K_j. Orig. art. has: 9 figures and 35 formulas.

ASSOCIATION: none

SUBMITTED: 12Sep63 DATE ACQ: 26May64 ENCL: 00

SUB CODE: IE NO REF SOV: 003 OTHER: 001

Card 2/2

ACCESSION NR: AP4041464 S/0103/64/025/006/0887/0895

AUTHOR: Krutova, I. N.; Rutkovskiy, V. Yu. (Moscow)

TITLE: Investigation of the dynamics of a model-adaptive system, with nonlinear and variable-parameter plants

SOURCE: Avtomatika i telemekhanika, v. 25, no. 6, 1964, 887-895

TOPIC TAGS: automatic control, automatic control system, adaptive automatic control, automatic control theory

ABSTRACT: These two problems of nonadaptive control are theoretically considered: (1) The plant is a first-order unit with a nonlinear static characteristic which causes system instability; (2) The self-regulation coefficient varies in time taking on plus and minus values which also impairs stability. Upon introducing the model-adaptive control, the system motion in the first problem is

described by: $T\dot{\varphi} + f(\varphi)\varphi = \delta$ — plant
$\delta = K_{cs} - K_1\varphi$ — controller

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ACCESSION NR: AP4041464

$$K_g = 1 + K_{g1}\int(g-\varphi)\operatorname{sign} g\,dt + K_{g2}(g-\varphi)\operatorname{sign} g,$$

where

$$K_1 = 1 - K_{11}\int(g-\varphi)\operatorname{sign} x\,dt - K_{12}(g-\varphi)\operatorname{sign}\varphi.$$

The introduction of error components into K_1 and K_g tends to increase the system stability and to improve the quality of the transient response. In the second problem, the system is described by:

$$T\dot{\varphi} + b(t)\varphi = \delta,$$
$$\delta = K_g g - K_1\varphi,$$

$$K_g = K_{g_0} + K_{g1}\int(g-\varphi)\operatorname{sign} g\,dt + K_{g2}(g-\varphi)\operatorname{sign} g,$$
$$K_1 = K_{10} - K_{11}\int(g-\varphi)\operatorname{sign}\varphi\,dt + K_{12}(g-\varphi)\operatorname{sign}\varphi.$$

In this case, too, the model-adaptive feature brings about better stability and transient response. Orig. art. has: 11 figures and 20 formulas.

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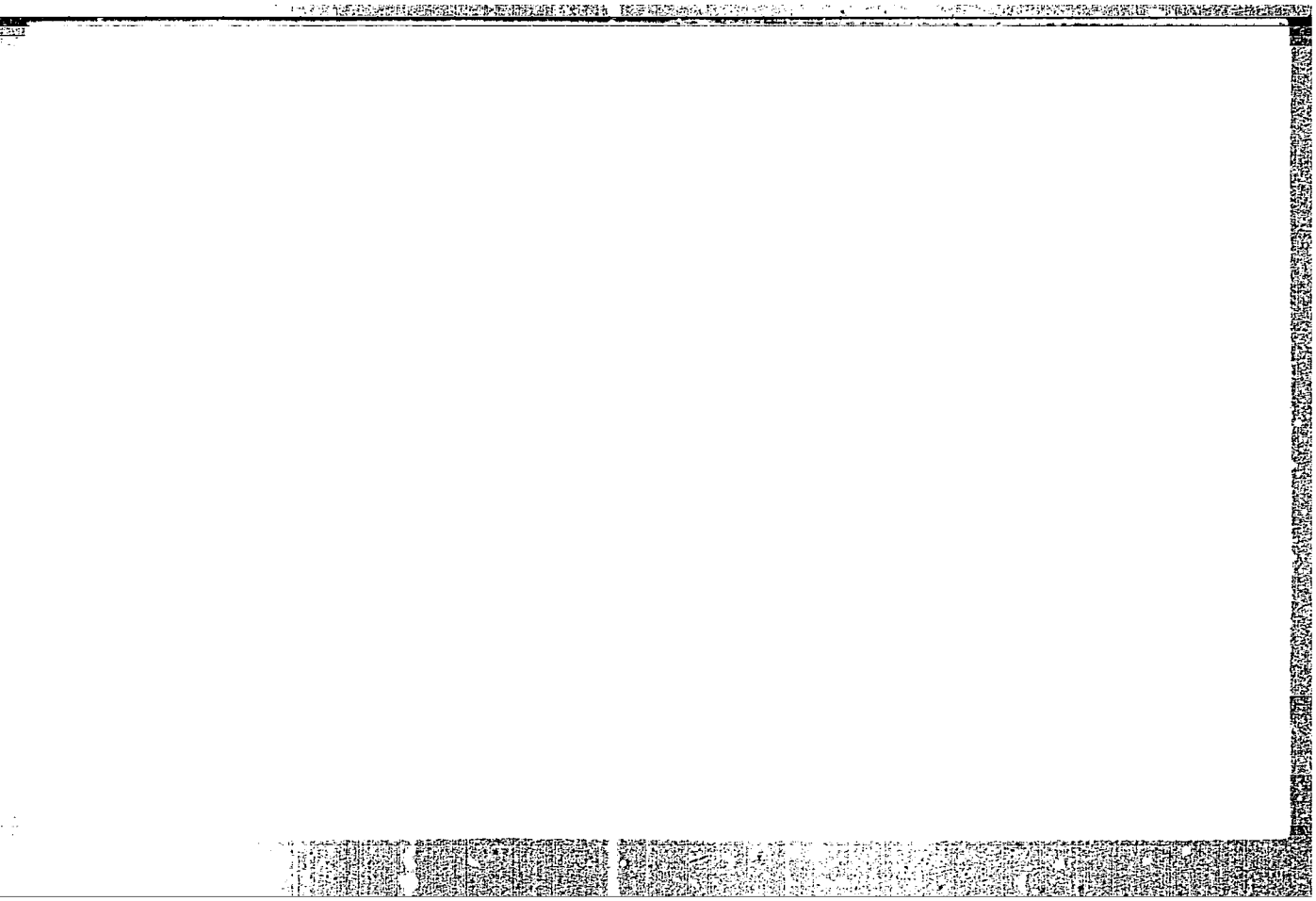

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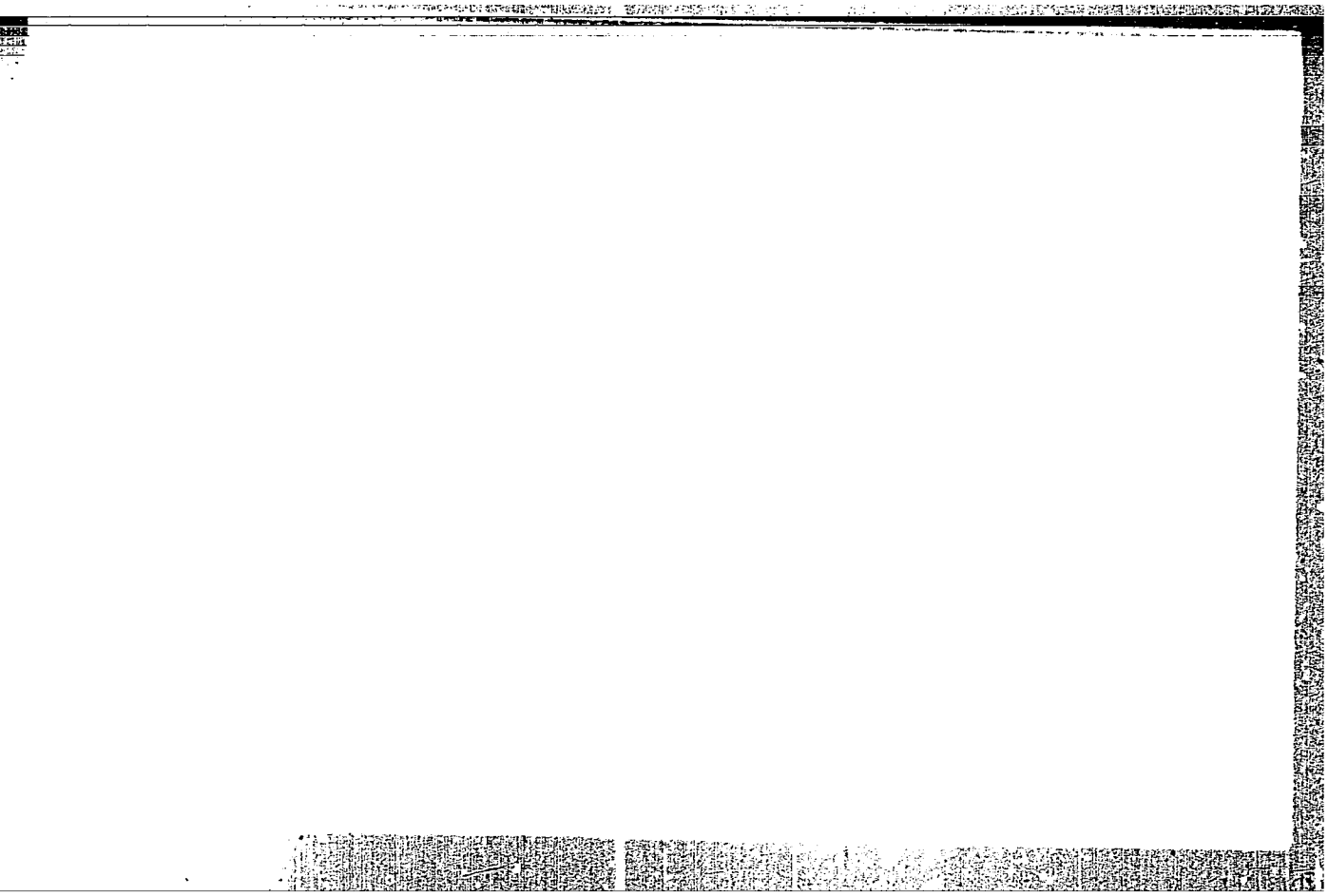

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KRUTOVA, I.N. (Moskva); RUTKOVSKIY, V.Yu. (Moskva)

Choice of the parameters of adaptive systems with a model. Avtom. i telem. 26 no.2:223-234 F '65. (MIRA 18:4)

L 1390-66 EWP(v)/EWP(k)/EWP(h)/EWP(l')/EWT(d)

ACCESSION NR: AP5021856 UR/0280/65/000/004/0134/0147

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow) 42 B

TITLE: The reduction in parameter-variation sensitivity of an adaptable system with a model

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 4, 1965, 134-147

TOPIC TAGS: adaptive control, automatic control system, control system design, automatic control stability

ABSTRACT: The authors described in an earlier paper an adaptable system with a model-standard containing several adjustment parameters. They found that one can augment the degree of stability of such a system against wide variations of the parameters by retuning in the feed-back loops the coefficients with the object's output coordinate and its derivative as a function of the differences between the coordinates of the model and the system. In such a case, each coefficient contains a multiplicative factor which complicates the circuit. The present paper investigates a system containing a model-standard in which the tuning is carried out using a single amplification coefficient K_0 of the regulator (the sensitivity problem). The dynamics of the system is analyzed using the principle of harmonic balance.

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L 1390-66

ACCESSION NR: AP5021856

The determination of the stability of the equilibrium state is followed by an analysis of the motion of second order systems. Results show that an appropriate choice of the K_0 variation law can make the system either stable or self-oscillatory while the coefficients of the equation of the original system vary within wide limits (including negative values). Orig. art. has: 57 formulas and 9 figures.

ASSOCIATION: None

SUBMITTED: 15Aug64 ENCL: 00 SUB CODE: DP, IE

NO REF SOV: 003 OTHER: 000

Card 2/2

L 37795-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD/BC

ACC NR: AT6017608 (N) SOURCE CODE: UR/0000/65/000/000/0046/0063

AUTHOR: Rutkovskiy, V. Yu. (Candidate of technical sciences); Krutova, I. N. (Candidate of technical sciences)

ORG: none

TITLE: Construction principles and certain theoretical problems for one class of adaptive systems with a reference model

SOURCE: Vsesoyuznaya konferentsiya po teorii i praktike samonastraivayushchikhsya sistem. 1st, 1963. Samonastraivayushchiyesya sistemy (Adaptive control systems); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 46-63

TOPIC TAGS: self adaptive control, nonlinear automatic control, nonlinear control system, control theory

ABSTRACT: The authors describe the analysis and design of a non-search adaptive control system utilizing a reference model. In such a system the transient processes of the controlled object and the model are continuously compared in a differential circuit and the appropriate coefficients in the regulator are adjusted to maintain a certain value of the difference $\phi_M-\phi$, where ϕ_M is the variable parameter of the model and ϕ is the corresponding controlled parameter of the object. It is assumed that all changes in the reference (model) parameters, as well as independent parameter varia-

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ACC NR: AT6017608

tions in the controlled object (noise) are functions of time. Under these conditions it is possible to adjust the coefficients k_i such that the system remains functional and noiseproof over a large range of parameter variations. Another advantage of the described system over the conventional search-type control system is the higher response speed possible within the stable region of operation. The selection of the model's transient processes with respect to the constraints of the real object solves the problem of optimization of the whole system. This and the choice of the appropriate coefficients, to be adjusted in the regulator, leads to the optimum design of a control system in which the performance of the controlled object will follow closely and rapidly that of the model over a wide range of disturbances and parameter variations, not possible with the conventional systems. Orig. art. has: 14 figures, 33 formulas.

SUB CODE: 09/ 13/ SUBM DATE: 22Nov65/ ORIG REF: 007/ OTH REF: 003

Card 2/2 MLP

KRUMOVA, I.N. (Moskva); KUTKOVSKIY, V.Yu. (Moskva)

Decrease of sensitivity to the change of parameters in an adaptive control system with an analog computer. Izv. AN SSSR. Tekh. kib. no.4:134-147 Jl-Ag '65. (MIRA 18:11)

ACCESSION NR: AT4011513 S/2531/63/000/146/0032/0035

AUTHOR: Krutova, K. A.

TITLE: Electrical characteristics of fogs in the region of Sverdlovsk

SOURCE: Leningrad. Glavn. geofiz. observatoriya. Trudy*, no. 146, 1963. Atmosfernoye elektrichestvo, 32-35

TOPIC TAGS: meteorology, fog, fog electric property, atmospheric electricity, haze

ABSTRACT: The observatory at Vy*sokaya Dubrava is located in a typical wooded region on the eastern slope of the Central Urals. Instruments were set up in a clearing, surrounded by a wooded area approximately 15 meters in height. Fogs are most frequent in the second half of the summer and the beginning of autumn; by type, they break down as follows: 40% - continuous; 32% - transparent; 28% - ground fog. Most complete information is available on the behavior of the atmospheric electrical potential gradient V', values for which were recorded on a Benndorf electrograph. For this parameter, an 11-year period of readings was analyzed. Although the mean values of the potential gradient with fog V'* noticeably exceed the mean value V' for the entire period of the observations (V'* = 224 volts/meter; V' = 165 volts/meter), individual cases were noted when negative

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ACCESSION NR: AT4011513

values for V'* were observed. In the Leningrad region, fogs with negative V'* readings (if only for a single hour) constitute approximately 20% of the total number of fogs in that area. The causes for the occurrence of negative potential gradient values in the case of fog are not yet clear. Negative V' values are rarely encountered even with dry fog. During haze (mist) no negative V' readings were recorded at Vy*sokaya Dubrava. Since mean V'* values for different fogs can differ very greatly among themselves, in order to obtain a general picture of the entire aggregate of observed V'* values, a calculation was made of the recurrence of fogs P (V) as a function of $\frac{V'*}{V'_n}$, where V'* is the mean value of V' for each individual fog, and V'_n is the mean monthly value of V'on normal days for the corresponding month and year (see Fig. 1 of the Enclosure). Most frequently encountered are fogs for which the function $\frac{V'*}{V'_n}$ is approximately equal to unity. If, to computate the same ratio, one uses the mean values V' for all days V'_n, there is a considerable reduction in the dispersion of the distribution curve P(V) and simultaneously the curve becomes more symmetrical. Recordings for two years of the electrical conductivity of the air were made at Sverdlovsk by means of an Imyanitov-system instrument (Imyanitov, I. M., Sachek, S. I., In'kov, B. K., Semenov, K. A. Pribor dlya izmereniya elektricheskoy provodimosti vozdukha u poverkhnosti Zemli. Trudy* GGO, vy*p. 110, 1961) and readings of the light ion concentration by means of an Ebert device. The mean values for the polar conductivity of the air (in 10^{-6} e.f.u.) during fogs (and also during haze and dry fog) are

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given in Table 1. The ratio of the mean concentration of light ions in fog n* (54 cases) to the mean concentration of all measurements n_a was found to have the following value for different polarities:

$$\left(\frac{n^*}{n_a}\right)_+ = 0.62, \quad \left(\frac{n^*}{n_a}\right)_- = 0.72.$$

Most frequently encountered are fogs for which the mean value of air conductivity is approximately half that of the normal value (no fog). There is a less noticeable change in conductivity in the case of haze and dry fog. L. V. Konduktorova and R. L. Lavrova took part in processing the data collected at the Sverdlovskaya GMO (Vy*sokaya Dubrava). Original article has: 2 tables and 3 figures.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main Geophysical Observatory)

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KRUTOVA, L.A.

Electrical characteristics of fogs in the Sverdlovsk region.
Trudy GGO no.146:32-35 '63. (MIRA 17:2)

EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(l) Pc-4/Pq-4/Pf-4/Pg-4/

-2413-65 ... IJP(c) WW/BC

... AP5006273 ... 22 0234

Krutova, I. N. (Moscow); Rutkovskiy, ...

...ing parameters for a model-adaptive ...

SOURCE: Avtomatika i telemekhanika, v. 26, no. 2, 1965, ...

... model adaptive control system, a... automatic ... automatic control system, autom...

This is a further development of ... v. 26, no. 1, 1965), the ... system (MAS) is considered ... coefficients and with variable para... MAS describable by essentially nonlinear equations ... problem is considered ... analytical treatment, only the particular problem is considered ... plant self-equalization coefficient var... a factor of ... during the

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...ss time. A study of the ... relay functions should be introduced into the error ... crease in the integral terms ... const. (2) The integral term ... the controlling variable; (3) With variable ... coefficients can be selected that the transient ... invariant to wide-range changes of plant parameters. Orig. art. has: 7 figures and 31 formulas.

ASSOCIATION: none

SUBMITTED: 04Nov63 ENCL: 00 SUB CODE: IE, DP

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